

tion of the universe, but of course we must proceed with caution and refrain from dogmatising. Our data are as yet limited, though of a striking character, and I shall at present be content with offering these suggestions, and continue to seek for further evidence, which in our dull climate is only to be obtained by much wearisome watching and promptness in grasping any opportunity.

Suspected Variability during Short Periods in certain Stars in Orion.
By Isaac Roberts.

The evidence of variability in some of the faint stars in *Orion* at present rests upon a photograph which I took with a dual exposure of the plate. The first exposure was of two hours' duration on January 29, and the second of $2\frac{1}{2}$ hours' duration on February 3, 1889, and on the enlarged copy of the photograph which I now present to the Society is shown the stars referred to, inclosed within a white ring, in order readily to distinguish them. The enlargement was made direct from the negative under the direction of Mr. Lockyer by his assistants at the Normal School of Science, South Kensington Museum. On examination of the dual stellar images on the photograph the eye immediately detects that ten of them have undergone considerable change in brightness or magnitude during the interval of five days which elapsed between the two exposures. In three of the ten stars, the brightness has increased to the extent of from one-fourth to one-third the measured diameter of the stellar photo-image, and one star appears on the second exposure where none is shown on the first exposure. Six of the ten stars have diminished in brightness during the interval to the extent of from one-fourth to four-tenths, the measured diameter of the photo-image. The following table gives the positions by Bond's chart and the measured photo-diameters of the ten stars :—

Table of the Positions by Bond's Chart and the Measured Diameters on the Photographic Negative of Variable Stars in the region of Theta Orionis.

No. of the Star on the Enlarged Photograph.	Approximate R.A. from θ^1 - Preceding + Following. m s	Approximate Declination from θ^1 - South + North. ' "	Measured Photographic Diameters of the Ten Stars in parts of an inch. 1889, January 29. February 3.	Star Magnitude by Bond.	Deduced Variation in Magnitude from Columns 4 and 5 in this Table in parts of an inch. Increase. Decrease.
1	-0 38	-42 20	0'00479 0'00629	7th	0'00150 ...
2	-0 20	-23 15	680 406	14th	.. 0'00274
3	-0 5	-23 15	499 613	12th	114 ...
4	+0 32	-26 15	634 477	14th	... 157
5	+1 44	-0 30	712 427	15th	... 285
6	+2 17	+11 0	622 500	not on chart	... 122
7	-0 25	+19 45	475 603	14th	128 ...
8	+0 21	+17 15	535 351	not on chart.	... 184
9	-0 3	+37 45	no star 490	15th	490 ...
10	-0 9	+55 31	698 558	13th	... 140

I have with due care examined the film of the negative under the microscope in order to see if any defect or evidence of defective sensibility on parts of the film could be traced so as to account for the variability in the brightness of the stellar images, but I could not find any such evidence, and I would of course have repeated the photographic experiment if the state of the sky at any time during the past twelve months had permitted. Those who possess the necessary telescopic power may study by eye-observations the variability in these stars, and it is one of the functions of the photographic method to point out where eye-observations can with advantage be applied in search for special knowledge, and these ten stars are now indicated for that purpose.

Observations of the Variable Star S (10) Sagittæ.

By J. E. Gore.

The following are my observations of this short-period variable during the year 1889. They form a continuation of the observations given in *Monthly Notices* for March 1889.

The comparison stars are as before.

The comparison stars are as before.						Mag.	
11 Sagittæ			5.8	
DM. + 16°, 4086			7.0	
Date.	Dublin M.T.		Mag.	Date.	Dublin M.T.		Mag.
	h	m			h	m	
1889 Jan. 1	7	30	5.8	1889 Oct. 15	10	12	6.13
May 24	10	10	5.7	16	7	35	6.16
June 3	10	40	6.28	17	10	27	6.4
July 15	10	38	6.24	22	11	15	5.75
29	10	0	5.8	23	7	55	5.7
30	10	10	5.8	24	6	40	6.0
31	9	35	5.9	26	6	35	6.34
Aug. 3	10	35	6.4	28	6	35	5.9
11	10	45	6.4	30	6	37	5.75
20	9	55	6.45	30	10	45	5.7
24	9	5	5.8	Nov. 5	7	35	5.9
30	8	30	6.2	16	6	50	5.8
31	11	15	5.7	19	9	30	6.15
Sept. 4	9	0	6.3	23	5	35	5.8
8	8	10	5.8	25	7	14	5.75
22	10	50	6.52	28	7	8	6.24
24	10	15	5.9	Dec. 5	7	29	6.13
25	8	30	5.7 (?)	11	7	58	5.7
Oct. 7	9	2	6.2	13	5	35	5.97
11	10	33	5.8	18	5	27	5.6
12	7	37	5.8	20	7	40	5.8
13	6	40	5.8	22	6	10	6.08
13	10	47	5.8	24	5	52	6.28